

AMENDMENTS TO THE CLAIMS

Claims 1-51. (Canceled)

52. (Previously Presented) A method for obtaining quality output signals from a chemical array image, said method comprising the steps of:

- rank ordering the output signals from the chemical array image according to signal magnitude;
- plotting the output signal magnitudes versus rank order numbers on a two-dimensional plot;
- determining a slope of the plotted subset of the rank ordered output signals which are representative of the quality signals, thereby identifying a subset of the rank ordered output signals which are representative of the quality signals; and
- determining a relative quality of the subset of quality signals based on said slope.

53. (Previously Presented) A method for obtaining quality output signals from a chemical array image, said method comprising the steps of:

- rank ordering the output signals from the chemical array image according to signal magnitude, wherein the chemical array image is broken down in to subunits, and coordinates of a location of each subunit of the chemical array image are maintained with the signal values even after said rank ordering;
- identifying a subset of the rank ordered output signals which are representative of the quality signals;

- identifying banding of subunits by comparing the rank order of the subunit signal outputs with said coordinates of the subunits; and

- producing diagnostics based on results of said identifying banding, wherein said producing diagnostics includes at least one of estimating a radius of at least one of said subsets, and computing a radius of gyration of at least one of said subsets.

54. (Previously Presented) A method for obtaining quality output signals from a chemical array image, said method comprising the steps of:

- rank ordering the output signals from the chemical array image according to signal magnitude, wherein the chemical array image is broken down into subunits, and coordinates of a location of each subunit of the chemical array image are maintained with the signal values even after said rank ordering;
- and

- identifying a subset of the rank ordered output signals which are representative of the quality signals;

wherein said steps are carried out for two channels or colors of subunits, said method further comprising comparing the output signals of the first channel to the second channel to check for misalignment of the channels.

55. (Previously Presented) A method for obtaining quality output signals from a chemical array image, said method comprising the steps of:

rank ordering the output signals from the chemical array image according to signal magnitude;
and

identifying a subset of the rank ordered output signals which are representative of the quality signals, wherein said steps are carried out for two channels or colors of signals, said method further comprising comparing signals between the two channels according to rank order, not physical location on the chemical array image.

56. (Previously Presented) A method for obtaining quality output signals from a chemical array image, said method comprising the steps of:

rank ordering the output signals from the chemical array image according to signal magnitude;
identifying a subset of the rank ordered output signals which are representative of the quality signals;

identifying a background subset comprising a subset of the rank ordered output signals having the lowest magnitudes; and

identifying a corona subset comprising a subset of the rank ordered output signals having transitional magnitude values between the values of said background subset and said subset having the high quality signals; and

identifying two corona section locations to be used for comparison with two corona sections identified in a second channel of a two channel array, to check color alignment.

57. (Previously Presented) A system for obtaining quality signals from a chemical array image, said system comprising:

means for rank ordering the output signals from reading the chemical array image, according to signal magnitude;

means for identifying a subset of the rank ordered output signals which are representative of the quality signals;

means for identifying a background subset comprising a subset of the rank ordered output signals having the lowest magnitudes;

means for identifying a corona subset comprising a subset of the rank ordered output signals having transitional magnitude values between the values of said background subset and said subset having the quality signals; and

means for identifying two corona section locations to be used for comparison with two corona sections identified in a second channel of a two channel array, to check color alignment.

58. (New) The method of claim 52, wherein the region is subdivided into pixels, and each ranked output signal is a signal representing output from a pixel.

59. (New) The method of claim 52, wherein said identifying a subset is performed using a filter.

60. (New) The method of claim 52, wherein coordinates of a location of each region of the chemical array image are maintained with the signal values even after said rank ordering.

61. (New) The method of claim 52, further comprising identifying a residue subset comprising a subset of the rank ordered output signals having magnitudes larger than the quality output signals subset.

62. (New) The method of claim 52, further comprising identifying a background subset comprising a subset of the rank ordered output signals having the lowest magnitudes.

63. (New) The method of claim 62, further comprising identifying a corona subset comprising a subset of the rank ordered output signals having transitional magnitude values between the values of said background subset and said subset having the quality output signals.

64. (New) The method of claim 60, further comprising identifying banding of subunits by comparing the rank order of the subunit signal outputs with said coordinates of the subunits.

65. (New) The method of claim 64, further comprising producing diagnostics based on results of said identifying banding.

66. (New) The method of claim 63, wherein said producing diagnostics includes at least one of calculating a mean, median or other estimate of signal values in at least one of said subsets, and calculating a standard deviation of signal values in at least one of said subsets.

67. (New) The method of claim 62, further comprising subtracting an average signal value of said background subset from an average value of said subset having the quality output signals.

68. (New) A method comprising forwarding a result obtained from the method of claim 52 to a remote location.

69. (New) A method comprising transmitting data representing a result obtained from the method of claim 52 to a remote location.

70. (New) A method comprising receiving a result obtained from a method of claim 52 from a remote location.

71. (New) The method of claim 52, wherein the chemical array image is taken from a microarray.

72. (New) The method of claim 52, further comprising the steps of:
comparing an average signal value from a first predefined subset made up of the lowest signal values in the rank ordering with an average signal value from a second predefined subset made up of the high signal values in the rank ordering to determine whether a predefined signal difference level is present.

73. (New) The method of claim 52, further comprising iterating said reading and rank ordering steps for at least one additional region.

74. (New) The method of claim 52, further comprising locating a grid to define said regions.

75. (New) The method of claim 75, wherein said locating comprises providing at least one mathematical probe to converge on the features of the array, calculating a distance between features having been converged on, and calculating a size of said regions said size being sufficient to completely contain a single feature.